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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,913	12/07/2005	Adrianus W.P.G.G. Vaassen	NL030686US1	9556
65913	7590	01/16/2008		
NXP, B.V. NXP INTELLECTUAL PROPERTY DEPARTMENT M/S41-SJ 1109 MCKAY DRIVE SAN JOSE, CA 95131			EXAMINER DINH, PAUL	
			ART UNIT 2825	PAPER NUMBER
			NOTIFICATION DATE 01/16/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/559,913	<b>Applicant(s)</b> VAASSEN, ADRIANUS W.P.G.G.	
	<b>Examiner</b> Paul Dinh	<b>Art Unit</b> 2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>12/7/05</u> . | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

This is a response to the Application filed on 12/7/05.

Claims 1-10 are pending.

### *Drawings*

Figures 1-2 are objected to because they should be labeled as "PRIOR ART" since they are typical art as indicated in the specification.

### *Claim Rejections - 35 USC § 102*

*The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:*

*A person shall be entitled to a patent unless –*

*(b) The invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

Claims 1-10 are rejected under 35 U.S.C. 102(b) as being anticipated by the prior art of record Kuroda (US pub 2001/0039643)

(Claim 1)

A power bus and a ground bus for supplying power from respective power and ground pads to a plurality of circuit elements on the IC (fig 4, 6), characterized in that the power distribution network comprises a plurality of decoupling cells (fig 6) for providing a static current flow between the power pad and the ground pad, and wherein the power distribution network is configured such that, for any given circuit element on the IC, the combined distance between the power pad and said circuit element, and between the ground pad and said circuit element, is constant (fig 4).

(Claims 2-10) wherein the power distribution network is configured such that, as the distance of any given circuit element from the power pad increases, the distance from the ground pad decreases in a complementary manner (fig 4, 6); wherein the power pad and the ground pad are arranged at diagonally opposite corners of the IC (fig 6); wherein the power distribution network comprises: a power bus comprising a vertical section connected to the

power pad and one or more horizontal sections connected to the vertical section (fig 4); a ground bus comprising a vertical section connected to the ground pad and one or more horizontal sections connected to the vertical section (fig 4); wherein the vertical section of the power bus is arranged parallel to the vertical section of the ground bus, such that the one or more horizontal sections of the power bus interleave the one or more horizontal sections of the ground bus (fig 4); wherein a horizontal section of the power bus and a horizontal section of a ground bus form a row for powering one or more of the circuit elements (fig 4); wherein one or more circuit elements are located between the horizontal section of the power bus and the horizontal section of the ground bus (fig 3-4, 6); wherein the decoupling cells include decoupling capacitors (fig 3, 6); wherein the decoupling cells are configured to be the same height as the circuit elements (fig 3-4, 6); wherein the decoupling cells are arranged between circuit elements on the IC (fig 3, 6); wherein the power distribution network comprises one or more smaller-power distribution networks having the same configuration (fig 3-4, 6).

***Claim Rejections - 35 USC § 103***

*The following is a quotation of 35 U.S.C. 103(a), which forms the basis for all obviousness rejections, set forth in this Office action:*

*(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.*

Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (USP 7272803) in view of one or more of Vitek (USP 7047515) and Culler (USP 6370678).

(Claim 1) Hsu discloses;

A power bus and a ground bus for supplying power from respective power and ground pads to a plurality of circuit elements on the IC (fig 2-5), and wherein the power distribution network is configured such that, for any given circuit element on the IC, the combined distance between the power pad and said circuit element, and between the ground pad and said circuit element, is constant (col 6 lines 59-61: "Power and ground stripes may be evenly spaced (i.e.,

*the distance between a power and ground stripe is uniform throughout the power grid structure)).*

Thus Hsu discloses substantially all the elements in claim 1 except decoupling cells/capacitors.

Cullers discloses decoupling/bypass cells/capacitors in col 3.

Vitek discloses decoupling/bypass cells/capacitors in col 2.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use decoupling/bypass cells/capacitors simply because one or more of the following reasons:

Decoupling/bypass cells/capacitors are well known in the art for stabilizing the power supply in circuits. (Culler col 3); and

Decoupling/bypass cells/capacitors are conventional for controlling transient noise on the power/ground distribution generated by active devices (Vitek col 2)

(Claims 2-10) wherein the power distribution network is configured such that, as the distance of any given circuit element from the power pad increases, the distance from the ground pad decreases in a complementary manner (Hsu fig 3-5, Viteck fig 5); wherein the power pad and the ground pad are arranged at diagonally opposite corners of the IC (Hsu fig 3-5); wherein the power distribution network comprises: a power bus comprising a vertical section connected to the power pad and one or more horizontal sections connected to the vertical section (Hsu fig 3-5); a ground bus comprising a vertical section connected to the ground pad and one or more horizontal sections connected to the vertical section (Hsu fig 3-5); wherein the vertical section of the power bus is arranged parallel to the vertical section of the ground bus, such that the one or more horizontal sections of the power bus interleave the one or more horizontal sections of the ground bus (Hsu fig 3-5); wherein a horizontal section of the power bus and a horizontal section of a ground bus form a row for powering one or more of the circuit elements (Hsu fig 3-5); wherein one or more circuit elements are located between the horizontal section of the power bus and the horizontal section of the ground bus (Hsu fig 3-5); wherein the decoupling cells include decoupling capacitors (Culler col 2, Vitek fig 3-6); wherein the decoupling cells are configured to be the same height as the circuit elements (fig Viteck fig 3-5); wherein the decoupling cells are arranged between circuit elements on the IC

(Viteck fig 3-6, Hsu fig 3-5); wherein the power distribution network comprises one or more smaller-power distribution networks having the same configuration (Viteck fig 3-6, Hsu fig 3-5).

### **Correspondence Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Dinh whose telephone number is 571-272-1890. If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor, Jack Chiang can be reached on 571-272-7483. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Paul Dinh  
Primary Examiner

